

CLAIMS

1. An information-processing server used in an information processing system to authenticate a communication terminal not including authentication information, based on authentication information stored in an authentication terminal, the information-processing server comprising:
an authentication information storage unit configured to store the authentication information;

an authentication image generating module configured to generate an authentication parameter, generate an authentication image including the authentication parameter and transmit it to the communication terminal, and then store the authentication parameter in an authentication parameter storage unit upon reception of an authentication request for the communication terminal;

an authentication information acquiring module configured to acquire from the authentication terminal information of the authentication image acquired from the communication terminal and the authentication information stored in the authentication terminal; and

an authentication information verifying module configured to access the authentication parameter storage unit, determine that the information of the authentication image acquired by the authentication information acquiring module is information of an image generated by the authentication image generating module, and determine whether or not the authentication information stored in the authentication terminal matches the authentication information stored in the authentication

information storage unit, and then transmit those results to the communication terminal.

2. The information-processing server of claim 1, wherein the authentication parameter generated by the authentication image generating module includes at least one of a uniquely identifiable random number and a date.

3. The information-processing server of claim 1, wherein
10 the authentication image generating module further stores an effective date of the authentication parameter in the authentication parameter storage unit; and

the authentication information verifying module authorizes authentication when a date acquired by the authentication information acquiring module is before the effective date of the authentication parameter stored in the authentication parameter storage unit, and
15 denies authentication when the date acquired by the authentication information acquiring module is after the effective date of the authentication parameter.

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4. The information-processing server of claim 1, wherein

the authentication image generating module transmits the authentication image to the communication terminal via a first communication network; and

25 the authentication information acquiring module acquires from

the authentication terminal via a second communication network different from the first communication network, the information of the authentication image and the authentication information.

5 5. The information-processing server of claim 1, wherein the information of the authentication image is information obtained at the authentication terminal, by decoding the authentication image acquired from the communication terminal.

10 6. The information-processing server of claim 1, wherein the information of the authentication image is information resulting from decoding the authentication image acquired from the communication terminal and received from the authentication terminal.

15 7. The information-processing server of claim 1, wherein the authentication terminal takes and decodes an authentication image presented at the communication terminal to acquire the information of the authentication image from the communication terminal,.

20 8. The information-processing server of claim 1, wherein
the information processing system further comprises a content providing server configured to provide content to the communication terminal;

the authentication image generating module receives from the
25 content providing server an authentication request for the communication

terminal, and

the authentication information verifying module transmits the results to the content providing server.

5 9. An information processing method used by an information processing system to authenticate a communication terminal not including authentication information, based on authentication information stored in an authentication terminal, the information processing method comprising:

10 storing the authentication information in an authentication information storage unit;

generating an authentication parameter, generating an authentication image including the authentication parameter and transmitting the authentication image to the communication terminal,

15 and storing the authentication parameter in an authentication parameter storage unit by an authentication image generating module upon reception of an authentication request for the communication terminal;

acquiring, through the authentication terminal, information of the authentication image transmitted from the communication terminal and
20 the authentication information provided by the authentication terminal, using an authentication information acquiring module; and

verifying the authentication information by accessing the authentication parameter storage unit, determining that the information of the authentication image is information of an image provided through
25 generating the authentication image, and determining whether or not the

authentication information stored in the authentication terminal matches the authentication information stored in the authentication information storage unit, and transmitting those results to the communication terminal.

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10. The information processing method of claim 9, wherein the authentication parameter, provided through generating the authentication image, includes at least one of a uniquely identifiable random number and a date.

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11. The information processing method of claim 9, wherein

in generating an authentication image, the authentication parameter storage unit further stores an effective date of the authentication parameter; and

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in verifying the authentication information, authentication is authorized when a date, obtained through acquiring the authentication information, is before the effective date of the authentication parameter stored in the authentication parameter storage unit, and authentication is denied when the date, obtained through acquiring the authentication information, is after the effective date of the authentication parameters.

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12. The information processing method of claim 9, wherein

in generating the authentication image, the authentication image is transmitted to the communication terminal via a first communication network; and

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in acquiring the authentication information, the information of the authentication image and the authentication information are acquired from the authentication terminal via a second communication network different from the first communication network.

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13. The information processing method of claim 9, wherein the information of the authentication image is information obtained at the authentication terminal, by decoding the authentication image acquired from the communication terminal.

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14. The information processing method of claim 9, wherein the information of the authentication image is information resulting from decoding the authentication image acquired from the communication terminal and received from the authentication terminal.

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15. The information processing method of claim 9, wherein the authentication terminal takes and decodes an authentication image presented to the communication terminal to acquire the information of the authentication image from the communication terminal,.

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16. The information processing method of claim 9, wherein

the information processing system further comprises a content providing server configured to provide a content to the communication terminal;

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in generating the authentication image, an authentication request

for the communication terminal is received from the content providing server, and

in verifying the authentication information, the results are transmitted to the content providing server.

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17. An information-processing server comprising:

an identifier correspondence information storage unit configured to store correspondence information retrieved by a communication terminal identifier; and

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an information converting module configured to convert information entered from a communication terminal in conformity with the correspondence information.

18. The information-processing server of claim 17, further comprising:

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an authentication image generating module configured to generate an image from the information entered from the communication terminal.

19. The information-processing server of claim 17, further comprising:

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an authorization information storage unit configured to store authorization information indicating whether the communication terminal is authorized to communicate information; and

an authorization judging module configured to judge the authentication information.

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20. An information processing method used in a system including a first

terminal, a second terminal, and an information-processing server mediating between the first terminal and the second terminal, the information processing method comprising:

receiving an action request as well as first level private
5 information from the first terminal;

authenticating the first terminal based on the first level private information;

issuing authentication information to the first terminal;

receiving from the first terminal second level private information
10 of a higher security level than the first level private information as well as the authentication information; and

transmitting the second level private information for an action requested, to the second terminal based on the authentication information,

15 wherein receiving, authenticating, issuing, receiving and transmitting are carried out by the information-processing server.

21. The information processing method of claim 20, wherein

the information-processing server is organized at the first terminal
20 by a plurality of servers, the information-processing server encrypts a plurality of pieces of information, the number of pieces of information corresponding to the number of the servers, using a plurality of encryption keys corresponding to the servers one to one, and generates as the second level private information a plurality of pieces of encrypted information,
25 the number of pieces of encrypted information corresponding to the

number of the servers; and

each of the servers of the information-processing server successively decrypts the plurality of pieces of encrypted information, and the information-processing server transmits the second level private
5 information to the second terminal.

22. The information processing method of claim 20, wherein the first level private information is generated using a group of fixed random numbers stored in memory of the first terminal.

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23. The information processing method of claim 20, wherein the first terminal comprises a combination of a main first terminal and an auxiliary first terminal, an image information transmitted as the authentication information to the main first terminal is optically acquired
15 by the auxiliary first terminal so as to provide private information of the auxiliary first terminal, and the private information of the auxiliary first terminal is received as the second level private information with the authentication information from the auxiliary first terminal.